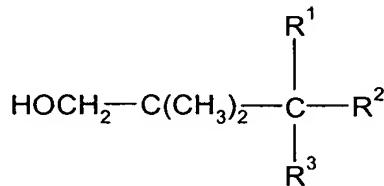


We claim:

1. A process for the single-stage preparation of polyoxyalkylene glycols by copolymerization of THF and neopentyl glycol in the presence of a heteropolyacid, wherein the total amount of all impurities of the formula (I)

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where R¹ and R² are each hydrogen when R³ is an oxyformyl or isopropionate radical, R¹ is hydrogen and R² is hydroxy when R³ is an isopropyl radical and R¹ is hydrogen when R² and R³ together form an -OCH₂-C(CH₃)-CH₂- radical,

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in the neopentyl glycol is less than 1000 ppm.

15 2. A process for the single-stage preparation of polyoxyalkylene glycols as claimed in claim 1, wherein the content of impurities of the formula (I) in the neopentyl glycol is less than 700 ppm.

20 3. A process for the single-stage preparation of polyoxyalkylene glycols as claimed in claim 1 or 2, wherein the content of compounds of the formula (I) in the neopentyl glycol is achieved by recrystallization, solvent extraction or hydrogenation of technical-grade neopentyl glycol.

25 4. A process for the single-stage preparation of polyoxyalkylene glycols as claimed in any of claims 1 to 3, wherein from 3 to 20% by weight of neopentyl glycol, based on tetrahydrofuran, is used.

30 5. A process for the single-stage preparation of polyoxyalkylene glycols as claimed in any of claims 1 to 4, characterized in that the copolymerization is carried out in the presence of a hydrocarbon.

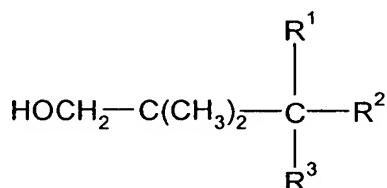
35 6. A process for the single-stage preparation of polyoxyalkylene glycols as claimed in any of claims 1 to 5, wherein the process is carried out continuously or batchwise.

7. A process for the single-stage preparation of polyoxyalkylene glycols as claimed in any of claims 1 to 6, wherein the copolymerization is carried out at from 20 to 100°C.

Preparation of tetrahydrofuran copolymers

Abstract

5 The present invention relates to a process for the single-stage preparation of polyoxyalkylene glycols by copolymerization of THF and neopentyl glycol in the presence of a heteropolyacid, wherein the total amount of all impurities of the formula (I)



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where R^1 and R^2 are each hydrogen when R^3 is an oxyformyl or isopropionate radical, R^1 is hydrogen and R^2 is hydroxy when R^3 is an isopropyl radical and R^1 is hydrogen when R^2 and R^3 together form an $-\text{OCH}_2-\text{C}(\text{CH}_3)-\text{CH}_2-$ radical,

15

in the neopentyl glycol is less than 1000 ppm.